CENTER FOR GLOBAL DEVELOPMENT

Cash Versus In-Kind

HOUSEHOLDS' PREFERENCES IN THE GHANA SCHOOL FEEDING PROGRAMME

Might Abreh, Biniam Bedasso and Radhika Nagesh

Abstract

Where do caregivers of school children stand on the perennial debate on cash versus in-kind transfers for social protection and human capital development? This paper explores the predictors of parental preferences for alternative modalities in the context of Ghana's national school feeding programme. Using data from a nationally representative survey of 1,425 caregivers whose children receive school meals, we explore the factors correlated with parental choices between on-site school meals, cash grants, or take-home rations. Our analysis reveals that the opportunity cost associated with preparing meals at home can potentially drive some mothers to prefer on-site meals over take-home rations. Additionally, households experiencing greater vulnerability to food price volatility and food insecurity tend to favour on-site meals over cash transfers. The findings suggest that the heterogeneity of preferences could be leveraged to finetune the targeting of alternative modalities, optimizing the overall benefits and costs of such programmes.

WORKING PAPER 708 • NOVEMBER 2024

Cash Versus In-Kind: Households' Preferences in the Ghana School Feeding Programme

Might Abreh
Non-resident fellow, Center for Global Development

Biniam Bedasso
Center for Global Development

Radhika Nagesh
Center for Global Development

The Center for Global Development is grateful to the Foreign, Commonwealth and Development Office for contributions in support of this work.

Might Abreh, Biniam Bedasso, and Radhika Nagesh. 2024. "Cash Versus In-Kind: Households' Preferences in the Ghana School Feeding Programme." CGD Working Paper 708. Washington, DC: Center for Global Development.
https://www.cgdev.org/publication/cash-versus-kind-households-preferences-ghana-school-feeding-programme

CENTER FOR GLOBAL DEVELOPMENT
2055 L Street, NW Fifth Floor
Washington, DC 20036

1 Abbey Gardens
Great College Street
London
SW1P 3SE

www.cgdev.org

Center for Global Development. 2024.

The Center for Global Development works to reduce global poverty and improve lives through innovative economic research that drives better policy and practice by the world's top decision makers. Use and dissemination of this Working Paper is encouraged; however, reproduced copies may not be used for commercial purposes. Further usage is permitted under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License.

The views expressed in CGD Working Papers are those of the authors and should not be attributed to the board of directors, funders of the Center for Global Development, or the authors' respective organizations.

Contents

I. Introduction **1**

II. Background and literature review **2**

Take-home rations as an alternative to on-site meals 3

Cash transfers as an alternative to school meals 4

Parents' perspectives on school feeding 4

III. Conceptual framework **5**

On-site meals vs take-home ration 6

On-site meals vs cash 6

IV. Methods **7**

Data 7

Estimation framework 8

V. Results and discussion **9**

Descriptive statistics 9

Correlates of parental preferences 12

VI. Conclusion **15**

References **16**

Figures

1. Sampled districts in Ghana 8
2. Parents' preference for school meals compared to alternative social assistance schemes 9
3. Regional distribution of parental preferences for alterative modalities 10

Tables

1. Summary statistics 10
2. Correlations with caregiver characteristics 12
3. Mother's preferences (opportunity cost of time) 13
4. Food inflation and structural vulnerability 14

I. Introduction

School meal interventions remain the most extensive social safety net in the world, benefiting around 418 million children (WFP, 2022). These programs play a broader social protection role in addition to their objectives of improving nutritional and educational outcomes for school-age children. This is part of the reason that several low- and middle-income countries are increasingly adopting and investing in school feeding, with existing evidence showing that the programs have led to significant gains in cognitive and health outcomes in countries like Ghana, Senegal and Tanzania (Azomahou et al., 2019; Mensah & Nsabimana, 2020). Moreover, larger benefits are reported for vulnerable groups especially girls (Evans & Acosta, 2020; Gelli et al., 2019). Further evidence shows that school feeding can be an effective social safety net tool as it contributes to the overall incomes of poorer households whose children participate in school meal programmes (Mostert, 2021).

There is a growing interest, particularly among aid donors, to generate rigorous evidence on the efficacy and cost-effectiveness of school meals in comparison to alternative human development and social protection instruments. Moreover, there is a need to expand the evidence base on the relative performance of alternative modalities used to improve the nutritional and educational outcomes of schoolchildren. Apart from the broader issues of effectiveness, there is significant evidence gap on the preferences of beneficiary households for alternative modalities falling within the broad realm of child nutrition and social protection.

This paper seeks to explore the predictors of parental preferences for alternative modalities to on-site school meals, such as take-home rations or cash grants in the context of the Ghana School Feeding Programme (GSFP). Put differently, it attempts to shed light on the differential implications of alternative school nutrition interventions on the utility of various types of households. The evidence could provide insights into what factors may need to be taken into account in designing school nutrition programs.

The GSFP has been operational since 2005, and currently serves over 2.6 million children across 9,000 pre-tertiary institutions, with the aim of providing an essential social safety net for poor, disadvantaged, and vulnerable school-age populations (Bedasso, Nagesh, Li, & Abreh, 2023). The thrust of the GSFP is to contribute to poverty reduction and food security while increasing school enrolment, attendance, and retention. The programme is presently delivered on-site, i.e. provision of one hot meal at school. An earlier programme in Ghana provided take-home rations for adolescent girls in selected schools in the northern parts of the country, conditional on 85 percent attendance each month. Globally, conditional cash transfers also have been considered a potentially effective intervention to improve overall child outcomes. In this context, the current study explicitly deals with the question of choice of modality from the point of view of parents and caregivers of children who are currently receiving on-site school meals.

We examine three hypotheses around parental preferences for alternative modalities. Firstly, we propose that the opportunity cost associated with the time required to plan, prepare, and serve meals to their children might explain parental preference for school meals over alternative social protection measures. Secondly, we suggest that households with a higher dependency ratio and, correspondingly, a higher demand for food, would prefer take-home rations or cash to on-site meals. Lastly, we hypothesise that local market volatility in an inflationary environment might lead parents to prefer in-kind food transfers (i.e. school meals) over an equivalent cash transfer. We analyse nationally representative survey data, gathered from 1425 caregivers of students who attend schools benefiting from the GSFP, to obtain correlational evidence on the above hypotheses. We find that female caregivers express a preference for cash over on-site meals while mothers engaged in professional occupations prefer school meals to take-home rations. More vulnerable households report a higher preference for on-site meals over cash transfers when controlling for regional market volatility and food prices. In all specifications, satisfaction with the performance of the current school meal programme is by far the strongest predictor of preference for on-site meal.

The remainder of the paper is organized as follows: Section II provides a brief background to the study, Section III discusses the relevant conceptual framework, and Section IV provides an overview of the methods and describes the sample. In Section V, we present the main results and discuss the findings, and we conclude in Section VI.

II. Background and literature review

Emerging evidence on the impacts of school meals programmes shows that the intervention has led to significant gains in education access (Aurino et al., 2019 in Mali; Azomahou et al., 2019 in Senegal) as well as learning outcomes (Azomahou et al., 2019 in Senegal; Chakraborty & Jayaraman 2019 in India). The evidence further shows that larger gains accrue to marginalised children, with girls receiving disproportionate benefits (Evans & Acosta, 2021). The programmes have also been found to improve student health outcomes, especially in poor and food-insecure areas, including improved Height-for-Age z-score (Gelli 2019 in Ghana), reduced prevalence of anaemia (Adelman 2019 in Uganda) and stunting (Anitha 2019 in India), and improvements on other anthropometric measures (Baum 2017 in Uganda, El Harake 2018 in Lebanon, Claasen, van der Hoeven, & Covic 2016 in South Africa). Additionally, there is promising, albeit limited, evidence on the social safety net dimension of school meals, particularly in the form of insurance against shocks (Aurino et al., 2019; Singh et al., 2014)

Despite the promising evidence, school feeding programmes are generally fraught with concerns about poor quality of meals as well as financial and supply sustainability. In the particular case of Ghana, the GSFP has come under immense fiscal pressure due to overall macroeconomic imbalances, leading to delayed payments for vendors, insufficient allocation to ensure quality meals for children, and suspension of plans for an expansion of the programme (Bedasso & Nagesh, 2022). Moreover, our survey of the programme revealed that, despite the significantly accurate targeting of

the intervention with 88 percent take-up, a majority of kids reported not consuming meals daily due to reasons of inadequate quantity and quality of food. A sizable portion of parents, more than 4 in 10, find the provision in their child's school less than reliable. As a result, around two-thirds of parents provide their children with money to purchase food.

In light of this mixed picture of positive impact and implementation challenges, critics often argue that it is important to look into alternative modalities to on-site meals that may deliver comparable benefits while reducing implementation challenges. While take-home rations have long been used as a close substitute or complement to on-site meals in school nutrition programs, cash grants have also risen in prominence as a social protection tool that could be employed to impact educational and nutritional outcomes with relatively lower administrative costs. In the following subsections, we review the existing evidence concerning the relevance and impacts of those modalities in comparison to on-site school meals. We will also discuss the evidence gap in terms of understanding parental preferences.

Take-home rations as an alternative to on-site meals

Take-home rations are typically used to promote food security and improve health outcomes in targeted populations (Alderman, Gilligan & Lehrer, 2012). There is also evidence suggesting that THRs can improve educational access by increasing enrolment, especially for girls or for students from more vulnerable households. Ghana's THR programme which is supported by WFP, for example, continues to show promise towards reducing out-of-school risks among adolescent girls in poor and food-insecure areas and helps to cushion struggling families during lean season (WFP, 2023). Take-home rations have also been used as a social protection measure – for instance during COVID-19 school closures, when food ordinarily intended to be given to students at school was distributed to learners as THRs in numerous countries (World Food Programme, 2020a and 2020b).

However, there is limited evidence that compares the health and educational outcomes of take-home rations with those from on-site meals. A 2012 study by Alderman, Gilligan & Lehrer (2012) reported similar impacts of THR and onsite meal programmes on boosting attendance for boys and girls whereas Kazianga, de Walgue & Alderman (2009) show comparable effects on the enrolment of students who were previously out of school.

There is reason to believe that the impact of THRs on primary beneficiaries is conditional on the nature of intra-household reallocation of resources. Take-home rations were found to improve nutritional outcomes for younger siblings of beneficiaries compared to school meals (Kazianga, de Walgue and Alderman, 2009). Another program in northern Burkina Faso that provided THR, conditional on girls' attendance, found that attendance increased for both boys and girls (Nikiema, 2019).

There is some evidence that gender-based disparities in intrahousehold food consumption persist which may put girls at a disadvantage in the case of THRs. Aurino (2017), for instance, highlights that

males enjoy more favourable intrahousehold food allocation in India, particularly among children and adolescents. Akerele (2011) also shows that adult males in Nigeria consume more calories than others. Harris-Fry et al. (2018) find that male household heads in Nepal have greater dietary adequacy and consume more animal-sourced foods than women in the same households.

Further, any potential benefits to indirect targets come with a caveat, as evidence indicates that THRs increase the burden on household heads, particularly those from poorer backgrounds. These manifested in Brazil during the COVID-19 pandemic when school kits were delivered to students' homes instead of providing prepared meals at school. Beneficiary families reported difficulties with storing, preparing, and rationing food (Barbosa, Coca & Soyer, 2023).

Cash transfers as an alternative to school meals

Cash transfers have been on the rise in recent years amid growing concerns about climate-induced food insecurity, which has been exacerbated by the COVID-19 pandemic. Proponents of cash transfers argue that it is a powerful tool for rebuilding people's livelihoods, contributing to their food and nutrition security, and increasing their resilience to shocks (Magendane, Karssenberg, & Goris, 2021). Evidence on the educational impacts of cash transfers is, however, mixed. A study by Pellerano et al. (2014) reported that unconditional cash transfers in Lesotho contributed to boosting primary school enrolment but not completion or transition from primary to secondary. Other studies found no impact of cash transfers on educational outcomes in Kenya (see Haushofer & Shapiro, 2016) and school attendance in Rwanda (Sabates et al., 2019).

When aiming to reduce food insecurity, several trade-offs must be considered between food transfers, vouchers, and direct cash transfers, which often make direct food distribution a less favourable option. This is especially relevant given the high operational costs associated with large-scale transport and storage, along with increased chances of leakages and pilferage.

In contrast, school meal programs designed to ensure students receive proper nutrition for effective learning present different advantages that may work in favour of in-school distribution instead of cash or vouchers. For example, while cash has the flexibility of being used for various family needs, this redistribution can dilute the intended nutritional benefits for school-aged children, potentially impacting their educational outcomes. Moreover, in highly volatile markets, the food value of the cash transfer could quickly erode and would have to be adjusted frequently to allow for such fluctuations (Mogues, 2020).

Parents' perspectives on school feeding

Parents, as primary caregivers and decision-makers for their children, are critical stakeholders in the implementation of school feeding programs. Their preferences, attitudes, and involvement can significantly impact program take-up and effectiveness, and in fact, may be used to predict the future sustainability of the program. There are also household-level impacts from free school meals

that can be important determinants of the overall value ascribed to school feeding particularly in resource-constrained contexts.

Despite the salience of parental input in determining wider outcomes for children at home and in school, this group has rarely been included in research on the importance and validity of school feeding as an effective social safety net. Research on parental perceptions of school feeding intervention has mainly focused on explaining variations in uptake, with very limited information on what caregivers' preferences are and where these might originate. Few studies explicitly probe parents' views on school meals. Such studies are particularly scarce in low- and middle-income countries. A study in Uganda revealed that both parents and children from families that opt in and contribute to the school meal programme appreciate it, but poorer families are unable to access these benefits, thereby increasing the inequality between students at school (Hove et al, 2019). Martinelli et al. (2021) examined the nutritional quality of meals provided in public schools across four cities in New Jersey and assessed whether parents' perceptions aligned with this quality. The study found that parents' perception of the healthfulness of meals served, a factor influencing their children's participation in the school meal program, did not accurately reflect the actual nutritional quality of foods served in the selected schools.

III. Conceptual framework

Conceptually, parental preference for the modality of social assistance is part of the overall household utility maximisation process. Therefore, we use Becker's time allocation model as a general framework to think through the trade-offs involved in determining parents' preference for on-site meals, take-home ration or cash transfer (Becker 1965).

Becker's model is suitable to conceptualize the decision parameters because it considers time use for both market and household production of consumption "commodities" (including leisure). The household-level (collective) utility function consists of n commodities denoted by Z_i:

$$U(Z_i, \ldots, Z_n) \tag{1}$$

Where the commodities are produced using a combination of time, T_i, and other inputs, X_i, as in the following function:

$$Z_i = f(X_i, T_i) \tag{2}$$

Households maximize their utility subject the "full income" budget constraint consisting of disposable income and forgone earnings:

$$\sum_{i=1}^{n} p_i' X_i + w_i' T_i \leq B \tag{3}$$

Where p_i is price of a consumption good and w_i is the wage rate.

On-site meals vs take-home ration

Assuming that parents choose between on-site school meals and take-home ration as two alternative inputs in the household utility function, we could represent the production function in (2) as a simple binary choice in the case of meals:

$$Z_f = \{X_m, f(X_r, T_r)\} \tag{4}$$

Where X_m represents on-site meals that contribute directly to the household's calorie consumption without any labour input and X_r represents take-home ration that needs labor input T_r to be transformed into final calories. Note that take-home ration, T_r, can be shared among multiple household members and could have a different quality to on-site meals. However, we assume take-home rations could not be exchanged for cash. Since both on-site meals and take-home ration are free, the relevant budget constraint is reduced to the forgone income due to preparing meals using take-home ration:

$$w_r T_r \leq B \tag{5}$$

Practically, the amount and quality of food offered in the form of on-site meals or take-home ration is likely to be fixed. Therefore, as per the objective function in (4) and the budget constraint in (5), the choice for the two alternative modalities is going to depend on at least three factors: 1. the opportunity cost of time which constitutes the budget constraint; 2. the implicit weights attached to calorie consumption of household members that could share the take-home ration, relative to that of the child benefiting from on-site meals; 3. the efficiency of the household technology combining THR and time to produce calories.

On-site meals vs cash

Alternatively, households could be offered a choice between on-site meals and cash grants equivalent to the cost of the meals. In this context, the choice becomes between a fixed amount of calories through on-site meals consumed directly by an eligible child and the flexible use of cash, which could be used to buy food or something else. This means the decision would involve the broader utility maximisation framework including the choice between food and other consumption items:

$$U(Z_f, \ldots, Z_n) \tag{6}$$

The meals production function is given as,

$$Z_f = \{X_m, f(X_c, T_c)\} \tag{7}$$

Where X_m represents on-site meals while X_c denotes the food ingredients or prepared food that could be purchased with the cash grant as a substitute for on-site meals.

The relevant budget constraint, which includes the market price of food, p_c, and the cash grant, c, is given as:

$$p_c X_c + w_c T_c \leq B + c \tag{8}$$

In this case, a choice between on-site meals and cash would be mediated by the following factors: 1. the marginal utility derived from food relative to the marginal utility for other consumption goods; 2. the market price of food items; 3. the opportunity cost of time; 4. the implicit weights attached to calorie consumption of household members that could share the food purchased with the cash grant relative to that of the child benefiting from on-site meals; 5. the efficiency of the household technology combining food ingredients and time to produce calories.

We formulate the following three hypotheses based on the above conceptual framework that we aim to test in the empirical analysis in the next sections:

1. Parents with a higher opportunity cost of time, in the form of actual or potential wages, tend to prefer on-site meals to either take-home ration or cash.
2. Households with more dependent family members and therefore, higher demand for food, tend to prefer take-home ration or cash to on-site meals.
3. Households facing higher food prices tend to prefer on-site meals to cash.

IV. Methods

This section describes the research design, data and estimation framework employed in the paper.

Data

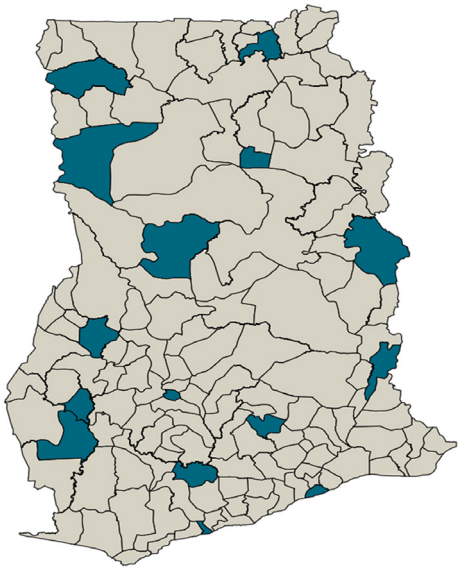
The empirical analysis in this paper draws on data collected as part of a larger study we conducted on the implementation dynamics of the Ghana School Feeding Programme (GSFP) in 2023.[1] For the larger study, data were collected from parents, school headteachers, caterers, and students involved in the programme. Surveys were designed to elicit information regarding perceptions, preferences, experiences, and challenges related to the GSFP.

We employed stratified random sampling to select a sample of 400 public primary schools participating in the GSFP with representation from each of Ghana's three ecological zones namely, the Savannah, Forest, and Coastal zones. Five districts were randomly selected from each of the zones through a stratified sampling method, considering factors such as urban and rural representation, and population proportionate representativeness. From each district, 25 to 30 schools were systematically selected based on the criterion of having an active and operational school feeding programme. The list of public schools that offered school feeding under the GSFP was extracted from the 2021 Ghana EMIS data, made available to the research team by the Ministry of Education. Therefore, each of the zones comprised around 120 schools (i.e., 5 districts × 25 schools) to 150 schools (i.e. 5 districts × 30 schools) included in the study sample. This geographic diversity was instrumental in enabling a more nuanced analysis of the factors related to parental preferences, as it accounted for regional variations in program implementation as well as local food security and food prices.

1 Find the full descriptive report for the study here. A blog summarising the key findings is available here.

In each school, the survey consisted of structured interviews with the school head, caterer responsible for school feeding, parents, and students. School heads were informed in advance that the enumerator would be visiting the school for surveys on a given day. The school heads were requested to randomly sample and invite four parents of students from primary grades (grades 2, 4, 6) to the school for in-person survey of parents. Thus, the expected sample of parents was a total of 1600 parents from 400 schools. In the end, we collected data from 1425 parents representing 89 percent response rate. The spread and coverage of the study countrywide is shown in Figure 1.

FIGURE 1. Sampled districts in Ghana



Source: Data collected for this study by authors.

Estimation framework

We employ a binary choice regression model to estimate the correlates of parental preferences for on-site meals vs take-home rations or direct transfer in the form of the cash equivalent of school meals. Parents were presented with a simple binary choice between either on-site meals and take-home ration or on-site meals and cash. Therefore, we model the conditional probability of choosing on-site meals under the two alternative scenarios as:

$Pr(Y=1|X=x)$ where $Y=1$ represents on-site meals and $Y=0$ represents take-home ration or cash grant. X denotes a set of potential explanatory variables.

For the current analysis, we employ a logistic transformation of the probability function to estimate the relationship between the choice variable and potential predictors:

$$Pr(Y=1|X=x)=ln\left(\frac{\pi}{1-\pi}\right)=\beta_0+\beta_1x_1+\beta_2x_2+...+\beta_kx_k \quad (9)$$

where π is the probability of choosing on-site meals and $x_1, x_2, ..., x_k$ are predictor variables.

We utilise the logit specification outlined in equation (9) to assess the hypotheses formulated in the conceptual framework section. We do not anticipate that the predictor variables mentioned in the hypotheses, such as the opportunity cost of time and household dependency ratio, are exogenous to modality choice. While we may not establish causal relationships, the coefficients are likely to highlight meaningful correlations, shedding light on patterns of preference heterogeneity. This insight could be instrumental in refining program design. However, more rigorous further research on causal links might be needed to draw conclusive policy implications.

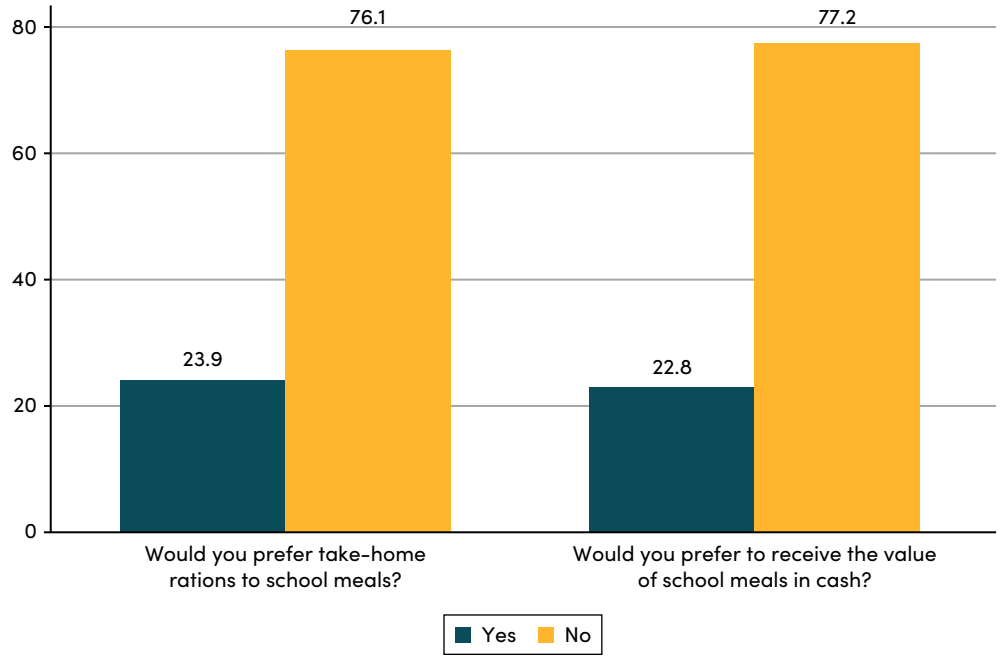
V. Results and discussion

Descriptive statistics

Our primary outcome of interest is derived from a set of questions in our survey instrument administered to parents or caregivers, which probed:

1. Would you prefer take-home rations to on-site school meals for your child?
2. Would you prefer to receive the value of the school meals in cash?

FIGURE 2. Parents' preference for school meals compared to alternative social assistance schemes



Source: Household Heads Survey, N = 1,425.

A simple descriptive summary of the data on the outcome variable reveals a clear preference for on-site school meals compared to either of the alternatives i.e., take-home rations and cash transfers. Figure 2 shows that close to 8 out of 10 parents reported preferring their children to receive school meals than either take-home rations or cash. There is substantial geographic variation in the choice of on-site meals over THR or cash as shown in Figure 3. The share of sample parents who prefer on-site meal to either modality across 14 of Ghana's 16 regions represented in our study ranges between 41 and 91 percent. The high share of caregivers preferring on-site meals could be partly attributed to status quo bias since most of the children sampled are receiving on-site meals currently. Conversely, the choice to deviate from the status quo could be viewed as a relatively strong preference for the alternative or dislike for on-site meals. In the following section we attempt to explain some portion of the approximately 23 percent deviation of parental preference from the status-quo (i.e. on-site meals) using a series of potential predictor variables.

FIGURE 3. Regional distribution of parental preferences for alterative modalities

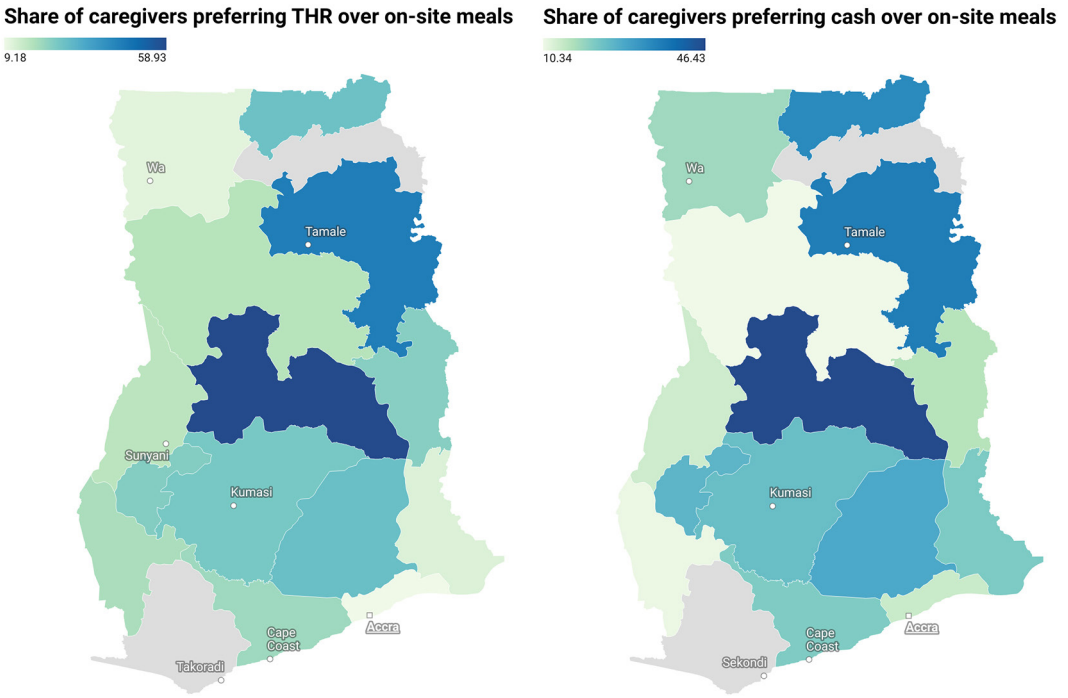


TABLE 1. Summary statistics

	Percentage	Mean	SD
Female caregivers	71.8		
Age of caregiver		41.6	10
Education			
No formal education	31.79		
Pre-tertiary certificate*	52.49		
Tertiary	15.72		

TABLE 1. (Continued)

	Percentage	Mean	SD
Relationship			
Mother	62.74		
Father	24.28		
Other caregiver	12.9		
Mother is professional	11.6		
Perception of school meals quality: edible or better	65.8		
Perception of school meals nutrition: moderately nutritious or better	67.2		
Perception of school meals quantity: moderately sufficient or better	48.1		
Household struggling with cost-of-living increases	41.1		
Preference for THR to on-site meals	23.9		
Preference for cash to on-site meals	22.8		
Number of children enrolled in target school		2.11	1.28
Dependency ratio		0.61	0.2

Notes: *In Ghana a "pre-tertiary" certificate refers to educational qualifications secured before entering higher (tertiary) education, and could refer to Kindergarten, Lower Primary, Upper Primary, Junior High School and Senior High School leaving exams.

Table 1 presents the summary statistics on the relevant variables based on the survey data. 72 percent of the respondents are women of which 62 percent are mothers of the children enrolled in sampled schools. The mean age of surveyed caregivers is 41. However, the relatively high standard deviation suggests that that there is a wide variation of age among caregivers. Nearly a third of the caregivers have no formal education, indicating a generally low level of human capital development of the target population. This is also reflected in the low share of mothers engaged in professional occupations, standing at 11 percent.

Surveyed caregivers were presented with a series of questions about the performance of the school feeding program on a range of indicators from quantity (portion size) to hygiene. More than two-thirds of them believe the food served is at least moderately nutritious. In terms of overall quality and taste, 65 percent think it is at least edible or better. Quantity is the most deficient aspect of the school meals, as demonstrated by a majority of the caregivers judging the amount served insufficient. We have conducted a principal component analysis on the Likert scale responses collected on the quality (taste), nutrition and quantity indicators to quantify the perception of caregivers of overall performance of the programme. We employ the first principal component, which explains around 70 percent of overall variation in caregiver opinion, as an index of programme performance in the regression analysis.

Caregivers were asked how their household was dealing with the cost-of-living increases in recent months. They were allowed to provide open-ended responses which were then coded into different categories indicating the level of stress on the household. 41 percent of the respondents reported struggling with the cost-of-living increases. In terms of the demographic composition of sample

households, the average dependency ratio of the households of the surveyed caregivers is 0.61, i.e. three out of five members of the average household are either too young or too old to contribute economically.

Correlates of parental preferences

We start by conducting an analysis of how caregiver characteristics correlate with parental preference for on-site meals over take-home ration or cash transfer. Two distinct models are estimated for preference for on-site meals versus take-home ration and cash transfer. Table 2 presents the marginal effects of various caregiver characteristics on the probability of choice of alternative school feeding modalities.

We find that female caregivers of children express a preference for cash over on-site meals whereas no statistically significant relationship exists between the gender of the caregiver and preference for take-home ration. Assuming that a cash grant would typically be received by female caregivers, the preference of female caregivers for cash could be understood in terms of their traditional responsibility of managing the household budget and the flexibility cash would give them in optimizing overall household consumption. The specifications in Table 2 control for the level of education of the respondent, which is found to not significantly correlate with the primary outcome variable. Perception of program performance, however, is positively and significantly correlated with preference for on-site meals, suggesting that caregivers who are satisfied with the overall performance of the current school feeding programme are likely to opt to stick to the status quo instead of switching to an alternative modality.

TABLE 2. Correlations with caregiver characteristics

	Preference for on-Site Meals Over Take-Home Ration			Preference for on-Site Meals Over Cash Equivalent		
Female	−0.11 (0.026)		0.023 (0.025)	−0.061** (0.025)		−0.071*** (0.024)
Age	0.002* (0.001)	0.002** (0.001)	0.002* (0.001)	0.0002 (0.001)	−0.001 (0.001)	0.0001 (0.001)
Education (ref: no formal education)						
Pre-tertiary	−0.033 (0.026)	−0.032 (0.025)	0.026 (0.025)	−0.015 (0.025)	−0.055 (0.089)	0.012 (0.025)
Tertiary	0.020 (0.034)	0.021 (0.034)	0.038 (0.033)	−0.025 (0.036)	−0.089 (0.125)	0.011 (0.035)
Relationship (ref: other caregiver)						
Mother		0.053 (0.038)			−0.169 (0.127)	
Father		0.068* (0.039)			0.100 (0.134)	
Perception of program performance			0.059*** (0.007)			0.045*** (0.007)
Region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.06	0.06	0.11	0.04	0.04	0.06
N	1409	1409	1409	1409	1409	1409

In Table 3, we focus on the subsample of caregivers who are mothers of the children benefiting from school meals. By estimating the correlation between modality preference and the professional status or level of education of the mothers, we attempt to provide a tentative test of the "opportunity cost of time" hypothesis. Mother's occupation is coded as either professional (i.e. clerical, technical, professional, and managerial) or non-professional (i.e. manual, agricultural, and trading). Assuming that professional jobs, on average, earn more, mothers that are engaged in professional occupations have a higher opportunity cost of time than those mothers that are working in the informal sector. We also control for education, which is supposed to serve as a proxy for the potential opportunity cost for mothers who may not be presently employed but could be employed in professional spheres in the future.

TABLE 3. Mother's preferences (opportunity cost of time)

	Preference for on-Site Meals Over Take-Home Ration		Preference for on-Site Meals Over Cash Equivalent	
Mother is professional	0.0136**	0.145**	0.093	0.102*
	(0.063)	(0.061)	(0.063)	(0.061)
Mother with tertiary education	0.041	−0.036	−0.046	0.034
	(0.064)	(0.061)	(0.065)	(0.063)
Mother's age	0.003**	0.003**	−0.0002	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)
Perception of program performance		0.059***		0.045***
		(0.008)		(0.009)
Number of children in the same school		0.004		0.033**
		(0.013)		(0.014)
Region fixed effects	Yes	Yes	Yes	Yes
Pseudo R2	0.06	0.11	0.003	0.06
N	886	875	886	875

Consistent with our expectation, we find that mothers engaged in professional occupations strongly prefer school meals to take home rations. In contrast, there is no clear correlation with respect to preference for school meals over cash. As indicated earlier, this finding may be explained by the liquidity and flexibility that cash transfers offer, also to enable the child to use the money to buy food at school, thereby minimising the opportunity cost from this choice for the mothers. The results further show that mothers with tertiary training do not seem to differ from mothers with no tertiary training in their choice of modality. This suggests that, once actual opportunity cost of time is accounted for in the form of current employment status, potential opportunity cost might be less relevant.

Again, we find that that older mothers are slightly more in favour of in-school meals than take-home rations, which aligns with our expectations that the relative disutility of household cooking responsibilities that come with take-home rations may outweigh the benefits for older mothers. Therefore, older mothers might prefer to outsource the responsibility of cooking the meals for their children to school caterers. Another factor that seems to incentivize mother to choose on-site meals

is the total number of children they have in the same school (and therefore receiving school meals). The positive correlation between preference for on-site meals over cash and number of children attending the school could be explained by the potentially reduced benefit from cash in terms of reallocation to other children when more children are already receiving school meals.

TABLE 4. Food inflation and structural vulnerability

	Preference for on-Site Meals Over Take-Home Ration			Preference for on-Site Meals Over Cash Equivalent		
HH significantly impacted by food inflation	0.007 (0.024)		−0.015 (0.024)	0.054** (0.024)		0.047** (0.024)
Region's relative food price index		0.611** (0.611)			0.563** (0.262)	
HH dependency ratio	−0.103* (0.061)	−0.002 (0.058)	−0.010 (0.058)	−0.32** (0.063)	−0.034 (0.059)	−0.042 (0.058)
Region's percentage of food insecure			-0.001 (0.001)			−0.002* (0.001)
Perception of program performaance	0.061*** (0.007)	0.049*** (0.007)	0.049*** (0.007)	0.048*** (0.007)	0.44*** (0.007)	0.042*** (0.007)
Region fixed effects	Yes	No	No	Yes	No	No
Pseudo R2	0.1	0.03	0.03	0.06	0.03	0.03
N	1258	1258	1258	1258	1258	1258

Table 4 displays the results of specifications focusing on household-level and regional vulnerability to food price inflation and food insecurity. Here, we use, as our primary explanatory variable, a measure of the household's vulnerability as defined by how severely the respondent states the household has been impacted by food price inflation. As expected, households that have been significantly impacted by the high rates of inflation in recent times are shown to prefer on-site meals to cash. While cash offers flexibility and liquidity, it exposes vulnerable households to volatile market conditions. Given high food price inflation and market volatility in Ghana around the survey period, this can be explained by households preferring to receive a fixed quantity of food rather than seeking similar nutrition through purchase in a volatile market. This potentially explains caregiver preference for on-site meals over cash, as they seek to insulate themselves against food price volatility. Hirvonen & Hoddinott (2021) reported similar evidence in Ethiopia while evaluating the country's Productive Safety Net Programme. Most beneficiaries of the programme expressed preference for receiving their payments solely or partly in food, although more food-secure and financially included households were likely to prefer cash transfers. These decisions were largely based on food price dynamics, with hikes in food prices found to induce shifts in household preference towards in-kind modalities. It is worth noting, however, that there is no significant correlation in the case of take-home rations, in which case, households are protected from price volatility through a predetermined quantity of food.

We also use regional food price index as an alternative to the subjective assessment of inflation's impact on the household. Again, parents residing in regions with relatively higher food prices tend to prefer on-site meals to cash. However, in this case, they are also shown to prefer on-site meals to take-home rations. Household dependency ratio is used as a potential proxy for household food insecurity. There is some indication that high dependency ratio is associated with preference for take-home ration or cash, benefits that could be shared with additional household members other than the entitled children. However, this finding is not robust to the inclusion of regional price index or a regional food insecurity indicator.

VI. Conclusion

This study explores the predictors of parental preference for alternative modalities to on-site school meals, such as take-home rations or cash grants in the context of the Ghana School Feeding Programme (GSFP). The study specifically sheds light on the differential implications of alternative school nutrition interventions on the utility of various types of households. We estimated a discrete choice model of parental preferences for on-site meals versus cash transfer or take-home rations, incorporating caregiver characteristics, perception of program performance, food inflation and dependency ratio of the household, among others, as potential explanatory variables.

The results support the "opportunity cost of time" hypothesis as mothers in professional occupations are shown to have a strong preference for on-site meals over take-home ration. We also found evidence that on-site meals might serve as an insurance against price volatility and food insecurity, making them preferable among households impacted by cost-of-living increases. In this sense, the study challenges the existing theoretical position suggesting that vulnerable households tend to prefer cash grant over in-kind transfer due to the flexibility and liquidity it offers. In deed, a cash grant allows households to make decisions regarding when and where to spend as well as what to buy which is probably the reason it is relatively more popular among female caregivers. However, this choice is conditional on local market conditions as well as perceived programme effectiveness.

The results indicate that there can be room for better targeting and context-specific programming along factors that are correlated with the heterogenous preferences of households. On the one hand, on-site meals may yield greater benefits for vulnerable households that are food insecure and exposed to the effects of market volatility. On the other hand, cash grants may be considered as an option for households that are closer to well-functioning food markets particularly if it is going to contribute towards the cost-effectiveness and financial sustainability of the programme.

References

Adelman, S, Gilligan, D. O., Konde-Lule. J., & Alderman, H. (2019). School Feeding Reduces Anemia Prevalence in Adolescent Girls and Other Vulnerable Household Members in a Cluster Randomized Controlled Trial in Uganda. J Nutr. 149(4), 659–666. doi: 10.1093/jn/nxy305. PMID: 30926996; PMCID: PMC6461720.

Alderman, H., Gilligan, D. O., & Lehrer, K. (2012). The impact of food for education programs on school participation in northern Uganda. *Economic Development and Cultural Change*, 61(1), 187–218.

Anitha, S., Kane-Potaka, J., Tsusaka, T. W., Tripathi, D., Upadhyay, S., Kavishwar, A., Jalagam, A., Sharma, N., & Nedumaran, S. (2019). Acceptance and Impact of Millet-Based Mid-Day Meal on the Nutritional Status of Adolescent School Going Children in a Peri Urban Region of Karnataka State in India. Nutrients. 11(9), 2077. doi: 10.3390/nu11092077. PMID: 31484377; PMCID: PMC6770931.

Aurino, E., Tranchant, J. P., Sekou Diallo, A., & Gelli, A. (2019). School Feeding or General Food Distribution? Quasi-Experimental Evidence on the Educational Impacts of Emergency Food Assistance during Conflict in Mali. The Journal of Development Studies, 55(sup1), 7–28. https://doi.org/10.1080/00220388.2019.1687874

Aurino, E. (2017). Do boys eat better than girls in India? Longitudinal evidence on dietary diversity and food consumption disparities among children and adolescents. Economics & Human Biology, 25, 99–111.

Akerele, D. (2011). Intra-household food distribution patterns and calorie inadequacy in South-Western Nigeria. International Journal of Consumer Studies, 35(5), 545–551.

Azomahou, T. T., Diagne, A., & Diallo, F. L. (2019). Non-compliance and non-response in randomised school meals experiment: Evidence from rural Senegal. Journal of African Economies, 28(5), 533–557. https://doi.org/10.1093/jae/ejz008.

Barbosa Jr, R., Coca, E., & Soyer, G. (2023). School food at home: Brazil's national school food programme (PNAE) during the COVID-19 pandemic. Social & Cultural Geography, 24(3–4), 620–639.

Baum, J. I., Miller, J. D., & Gaines, B. L. (2017). The effect of egg supplementation on growth parameters in children participating in a school feeding program in rural Uganda: A pilot study. Food Nutr Res. 61(1), 1330097. doi: 10.1080/16546628.2017.1330097. PMID: 28659739; PMCID: PMC5475308.

Becker, G. S. (1965). A Theory of the Allocation of Time, *The Economic Journal*, 75(299). https://doi.org/10.2307/2228949

Bedasso, B., Nagesh, R., Abreh, M. K., Mohammed, A-R., Bosu, R. S., Hormenu, T., Mills, C. A., Bakah, M. E. B., Ankomah, Y. A., Le, T., & Owusu, K. A. (2023). '*Building Resilience in the Ghana School Feeding Programme*'. Cape Coast: University of Cape Coast.

Bedasso, B., Nagesh, R., Li, T. & Abreh, M. K. (2023). Feeding Ghana's Future: Navigating Challenges for Sustainable School Feeding in Ghana. https://www.cgdev.org/blog/feeding-ghanas-future-navigating-challenges-sustainable-school-feeding-ghana

Bedasso, B. & Nagesh, R. (2022). When the IMF Meets School Meals: Ghana's Fiscal Reckoning Presents a Key Test. https://www.cgdev.org/blog/when-imf-meets-school-meals-ghanas-fiscal-reckoning-presents-key-test

Chabrol, V. (2023). 5 suggestions to ensure school feeding programs are sustainable, Education for All blog, GPE, https://www.globalpartnership.org/blog/5-suggestions-ensure-school-feeding-programs-are-sustainable (accessed on 22 December, 2023).

Chakraborty, T. & Jayaraman, R. (2019). School feeding and learning achievement: Evidence from India's midday meal program, *Journal of Development Economics*, Elsevier, 139(C). https://doi.org/10.1016/j.jdeveco.2018.10.011

Collis, J., & Hussey, R. (2013). Business research: A practical guide for undergraduate and postgraduate students: Palgrave Macmillan.

Delbiso, T. D., Kotecho, M. G., & Asfaw, F. M. (2021). Effects of COVID-19 imposed school closure on school feeding program in Addis Ababa, Ethiopia. *Social Sciences & Humanities Open*, 4(1), 100185

El Harake, M. D., Kharroubi, S., Hamadeh, S. K., & Jomaa, L. (2018). Impact of a Pilot School-Based Nutrition Intervention on Dietary Knowledge, Attitudes, Behavior and Nutritional Status of Syrian Refugee Children in the Bekaa, Lebanon. Nutrients. 10(7), 913. doi: 10.3390/nu10070913. PMID: 30018221; PMCID: PMC6073287.

Evans, D. K., & Mendez Acosta, A. (2021). Education in Africa: What are we learning? Journal of African Economies, 30(1), 13–54. https://doi.org/10.1093/jae/ejaa009

Ford, A., Eadie, D., & Stead, M. (2015). Process evaluation of the implementation of Universal Free School Meals: Research with parents, NHS Health Scotland. https://www.healthscotland.scot/media/1134/process-evaluation-of-the-implementation-of-universal-free-school-meals-research-with-parents-oct15.pdf

Gelli, A., Aurino, E., Folson, G., Arhinful, D., Adamba, C., Osei-Akoto, I., Masset, E., Watkins, K., Fernandes, M., Drake, L., & Alderman, H. (2019). A School Meals Program Implemented at Scale in Ghana Increases Height-for-Age during Midchildhood in Girls and in Children from Poor Households: A Cluster Randomized Trial. J Nutr. 149(8), 1434–1442. doi: 10.1093/jn/nxz079. PMID: 31100125; PMCID: PMC6686055.

Harris-Fry, H. A., Paudel, P., Shrestha, N., Harrisson, T., Beard, B. J., Jha, S., ... & Saville, N. M. (2018). Status and determinants of intra-household food allocation in rural Nepal. European journal of clinical nutrition, 72(11), 1524–1536.

Haushofer, J., & Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: Experimental evidence from Kenya. The Quarterly Journal of Economics, 131(4), 1973–2042. https://doi.org/10.1093/qje/qjw025

Heckman, J., J. (2015). Introduction to A Theory of the Allocation of Time by Gary Becker. Econ J (London), (583), 403–409. doi: 10.1111/ecoj.12228. PMID: 26074623; PMCID: PMC4439835. doi: 10.1111/ecoj.12228

Hirvonen, K., & Hoddinott, J. (2021). Beneficiary views on cash and in-kind payments: Evidence from Ethiopia's productive safety net programme. The World Bank Economic Review, 35(2), 398–413.

Jacoby, H. G. (2002). Is there an intrahousehold 'flypaper effect'? Evidence from a school feeding programme. The Economic Journal, 112(476), 196–221.

Jawa, T. M. (2022). Logistic regression analysis for studying the impact of home quarantine on psychological health during COVID-19 in Saudi Arabia. Alexandria Engineering Journal, 61(10), 7995–8005.

Kazianga, H., de Walque, D., & Alderman, H. (2019). Educational and Health Impacts of Two School Feeding Schemes: Evidence from a Randomized Trial in Rural Burkina Faso (June 1, 2009). World Bank Policy Research Working Paper No. 4976, Available at SSRN: https://ssrn.com/abstract=1427636

Kothari, C. R. (2004). Research methodology: Methods and techniques. In New Age International (P) Lehner, M. (2009) Group Lending versus Individual Lending in Microfinance. Discussion Paper No. 299. Munich: University of Munich.

Magendane, K., Karssenberg, M., & Goris, Y. (2021). Cash Transfers for Food and Futures. New insights into cash transfer programming in fragile settings, The Foundation for International Development Publications (IDP), p. 24. https://www.thebrokeronline.eu/wp-content/uploads/2021/01/Report_Cash-transfers-for-food-and-futures.pdf (accessed 21 December 2023)

Martinelli, S., Acciai, F., Yedidia, M. J., & Ohri-Vachaspati, P. (2021). Do parental perceptions of the nutritional quality of school meals reflect the food environment in public schools? International Journal of Environmental Research and Public Health, 18(20), Article 10764. https://doi.org/10.3390/ijerph182010764

Mensah, J. T., & Nsabimana, A. (2020). Food for Thought: School Feeding and Cognitive Performance in Rwanda. Working paper. https://custom.cvent.com/4E741122FD8B4A1B97E483EC8BB51CC4/files/schoolfeedingandstudentperformanceinrwandabyaimablejustice.pdf

Mogues, T. (2020). Food markets during COVID-19. Special Series on Covid-19 Washington DC: International Monetary Fund Downloaded on, 8(3).

Mostert, C. (2021). The impact of the school feeding programme on the education and health outcomes of South African children, *Children and Youth Services Review*, 126. https://doi.org/10.1016/j.childyouth.2021.106029

Motrenko, Anastasiya, Vadim Strijov, & Gerhard-Wilhelm Weber (2014). "Sample size determination for logistic regression." Journal of Computational and Applied Mathematics, 255, 743–752. https://doi.org/10.1016/j.cam.2013.06.031

Claasen, N., van der Hoeven, M., & Covic, N. (2016). Food Environments, Health and Nutrition in South Africa.

Nikiema, P. R. (2019). The impact of School feeding programmes on educational outcomes: Evidence from Burkina Faso. *Journal of African Economies*, 28(3), 323–341.

Pellerano, L., Moratti, M., Jakobsen, M., Bajgar, M., & Barca, V. (2014). Child grants programme impact evaluation: [Follow-up Report]. https://socialprotection.org/discover/publications/child-grants-programme-impact-evaluation

Prasher, K. (2020). Take-Home-Rations: India's last-mile nutrition programme. https://www.thehindubusinessline.com/blink/know/new-compendium-on-indias-take-home-rations-programme/article32693391.ece

Sabates, R., Bhutoria, A., Sabates-Wheeler, R., & Devereux, S. (2019). Schooling responses to income changes: Evidence from unconditional cash transfers in Rwanda. International Journal of Educational Research, 93, 177–187. https://doi.org/10.1016/j.ijer.2018.11.011

Singh, Abhijeet, Park, Albert & Dercon, Stefan. (2014). School Meals as a Safety Net: An Evaluation of the Midday Meal Scheme in India, Economic Development and Cultural Change, 62(2), 275–306. https://EconPapers.repec.org/RePEc:ucp:ecdecc:doi:10.1086/674097

Singh, N. (2019). Gender, intra-household discrimination and cash transfer schemes: The case of Indian Punjab. Economies, 7(3), 75.

Taris, T. W., Kessler, S. R., & Kelloway, E. K. (2021). Strategies addressing the limitations of cross-sectional designs in occupational health psychology: What they are good for (and what not). Work & Stress, 35(1), 1–5.

ten Hove, H., Roefs, M., Herens, M., Kizito, F., Katungye, V., Mugabi, F., ... & Mugizi, D. (2019). *Exploring the views of learners and parents on the effects of school feeding: Action research in the TIDE School Milk Programme, South West Uganda* (No. 19–078). Wageningen Centre for Development Innovation.

Tembon, A. C. (2016). What We Can Learn from School Feeding Programs from Around the World. World Bank Blogs, Retrieved Online via: https://www.worldbank.org/en/news/feature/2023/12/12/demographic-changes-fiscal-constraints-future-education-low-income-countries-efw

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. Chest, 158(1), S65–S71. https://doi.org/10.1016/j.chest.2020.03.012

World Food Programme (2018). Addressing food insecurity: Does the choice of transfer modality matter? Study comparing voucher, cash and multipurpose cash in El Salvador. Available online at: https://www.calpnetwork.org/wp-content/uploads/2020/03/1544714317.Multi-Purpose-Cash-Study_El-Salvador-1.pdf

World Food Programme (2020a). Global Monitoring of School Meals During COVID-19 School Closures. Retrieved online via: https://cdn.wfp.org/2020/school-feeding-map/index.html

World Food Programme (2020b). The impact of COVID-19 on school feeding around the world. A Special Report from the State of School Feeding Worldwide 2020. https://docs.wfp.org/api/documents/WFP-0000127651/download/

World Food Programme (2022). The State of School Feeding Worldwide 2022. https://publications.wfp.org/2022/state-of-school-feeding/

World Food Programme (2023). Evaluation of Ghana WFP Country Strategic Plan 2019–2023, Retrieved Online via: https://www.wfp.org/publications/evaluation-ghana-wfp-country-strategic-plan-2019-2023